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BTS 07-17

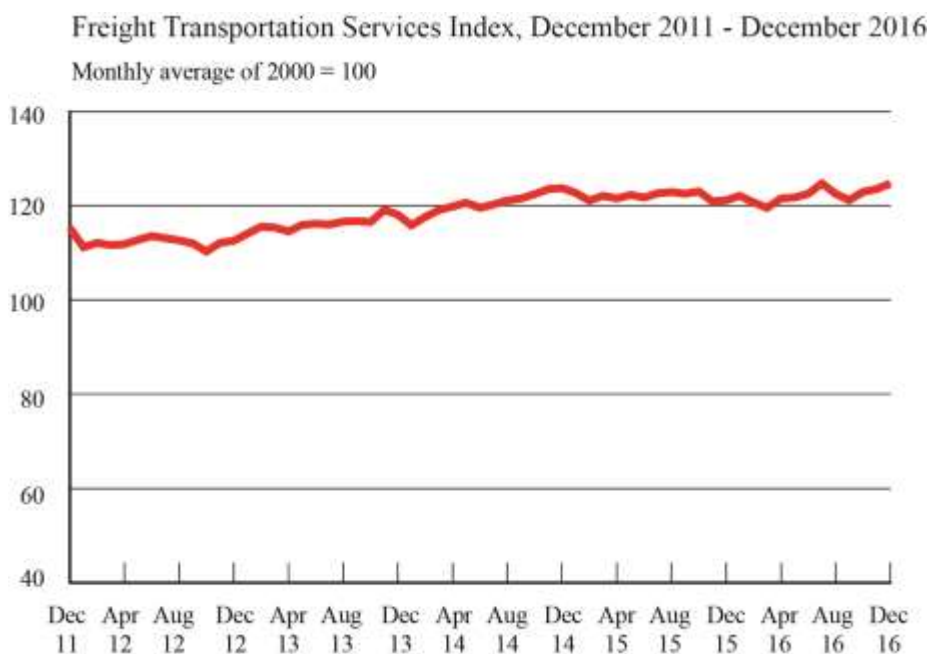
Wednesday, February 8, 2017

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December 2016 Freight Transportation Services Index (TSI)

The Freight Transportation Services Index (TSI), which is based on the amount of freight carried by the for-hire transportation industry, rose 1.0 percent in December from November, rising for the third consecutive month, according to the U.S. Department of Transportation's Bureau of Transportation Statistics' (BTS). The December 2016 index level (124.7) was 31.7 percent above the April 2009 low during the most recent recession (Tables 1, 2, and 2A).



The level of freight shipments in December measured by the Freight TSI (124.7) was equal to the all-time high reached in July 2016 (Table 2A). BTS' TSI records begin in 2000. See historical [TSI data](#).

The November index was revised to 123.5 from 123.2 in last month's release. Monthly numbers for August through October were revised up slightly and monthly numbers from January through June were revised down slightly.

The Freight TSI measures the month-to-month changes in for-hire freight shipments by mode of transportation in tons and ton-miles, which are combined into one index. The index measures the output of the for-hire freight transportation industry and consists of data from for-hire trucking, rail, inland waterways, pipelines and air freight. The TSI is seasonally-adjusted to remove regular seasons from month-to-month comparisons.

Analysis: The December Freight TSI grew by 1.0 percent from the previous month due to increases in trucking, pipeline, rail intermodal, and water, while air freight and rail carloads declined. The December increase was driven by economic growth. The [Federal Reserve Board Industrial Production index](#) rose by 0.8 percent in December, with growth in both manufacturing and utilities, even as mining production declined. [Employment](#) and [Personal Income](#) both grew in December, though housing starts were off by 0.2 percent.

The 2.9 percent fourth quarter increase from the previous quarter took place as [Gross Domestic Product](#) (GDP) growth slowed to an annual rate of 1.9 percent from 3.5 percent in the third quarter, while [Industrial Production](#) grew by 0.4 percent. The fourth quarter slowdown in GDP growth was preceded by a third quarter decline in Freight TSI and the rapid GDP growth in the third quarter was preceded by a strong increase in Freight TSI in the second quarter.

Trend: The 1.0 percent increase in December was the third consecutive monthly Freight TSI increase. These three months of increases, following two months of declines brought Freight TSI to its highest level ever, matching the record high level of 124.7 in July 2016. The December level was 2.9 percent above the level at the start of 2016.

The 2.9 percent fourth quarter increase followed a decrease of 1.1 percent in the previous quarter, for a net increase of 1.8 percent over the last six months. The fourth quarter increase was the largest increase in freight TSI since the fourth quarter of 2011. Freight TSI increased in two of the four quarters of 2016 for an annual increase of 2.9 percent, after declining in three of the four quarters of 2015, for an annual decline of 2.0 percent. The Freight TSI is now 1.8 percent above the level of two years ago at the beginning of 2015. The index remains high compared to earlier years, rising 31.7 percent since the low of 94.7 in April 2009. For additional historical data, go to [TSI data](#).

Index highs and lows: For-hire freight shipments in December 2016 (124.7) were 31.7 percent higher than the low in April 2009 during the recession (94.7). The December 2016 level was equal to the all-time high reached in July 2016.

Year to date: For-hire freight shipments measured by the index were up 2.9 percent in December compared to the end of 2015 (Table 3).

Long-term trend: For-hire freight shipments are up 8.2 percent in the five years from December 2011 and are up 12.6 percent in the 10 years from December 2006 (Table 5).

Same month of previous year: December 2016 for-hire freight shipments were up 2.9 percent from December 2015 (Tables 4, 5).

4th quarter changes: The Freight TSI rose 2.9 percent in the fourth quarter, the largest quarterly increase since a 3.5 percent rise in the fourth quarter of 2011 (Table 10).

The TSI uses seasonally adjusted data on for-hire freight and passenger transportation services to create three indexes measuring monthly changes in transportation services output from the base year of 2000. The three indexes are for-hire freight shipments, passenger travel, and a combined measure that merges freight and passenger indexes. See [Seasonally-Adjusted Transportation Data](#) for numbers for individual modes. TSI includes data from 2000 to the present. Release of the December 2016 index is scheduled for March 8.

Passenger Index: The TSI for passengers fell 0.1 percent in December from its November level (Table 6). The Passenger TSI December 2016 level of 124.0 was 0.3 percent below the December 2015 level (Table 7). The index is up 7.2 percent in five years and up 9.2 percent in 10 years (Table 5). The passenger TSI measures the month-to-month changes in travel that involves the services of the for-hire passenger transportation sector. The seasonally adjusted index consists of data from air, local transit and intercity rail.

Combined Index: The combined freight and passenger TSI rose 0.6 percent in December from its November level (Table 8). The combined TSI December 2016 level of 124.6 was 1.9 percent above the December 2015 level (Table 9). The combined index is up 7.9 percent in five years and up 11.4 percent in 10 years (Table 5). The combined TSI merges the freight and passenger indexes into a single index.

Revisions: Monthly data has changed from previous releases due to the use of concurrent seasonal analysis, which results in seasonal analysis factors changing as each month's data are added.

BTS research has shown a clear relationship between economic cycles and the Freight and Passenger Transportation Services Indexes. See a [study of this relationship](#) using smoothed and detrended TSI data. Researchers who wish to compare TSI over time with other economic indicators, can use the [FRED database](#), which includes freight, passenger and combined TSI, and which makes it possible to easily graph TSI alongside the other series in that database. See [TSI data on FRED](#).

For a webinar on the TSI, see [Past Webinars](#). For a video explanation of the TSI, see [Overview of the Transportation Services Index](#). A BTS report explaining the TSI, [Transportation Services Index and the Economy](#), is available for download.

Table 1: Freight, Passenger and Combined Transportation Services Indexes since June 2016

Percent Change from Previous Month

(Seasonally Adjusted, Monthly Average of 2000 = 100)

	Freight		Passenger		Combined	
	Index	Pct. Change	Index	Pct. Change	Index	Pct. Change
June	122.5	0.7	125.5	1.0	123.6	0.8
July	124.7	1.8	124.0	-1.2	124.6	0.8
August	122.5	-1.8	123.1	-0.7	122.7	-1.5
September	121.2	-1.1	124.8	1.4	122.4	-0.2
October	122.9	1.4	122.5	-1.8	122.8	0.3
November	123.5	0.5	124.1	1.3	123.8	0.8
December	124.7	1.0	124.0	-0.1	124.6	0.6

SOURCE: Bureau of Transportation Statistics

NOTE: Percent changes based on numbers prior to rounding.

Table 1A: Annual High and Low Points in Freight Transportation Services Index, 2009-2016

Year	Month	Peak	Month	Bottom
2009	June	101.5	April	94.7
2012	June	113.5	April	110.3
2013	November	119.1	January	114.1
2014	December	123.7	January	115.8
2015	October	123.0	November	120.9
2016 (thru December)	July	124.7	June	119.5

SOURCE: Bureau of Transportation Statistics

Table 2: Freight Transportation Services Index Monthly Changes, 2013-2016
Percent change from previous month

	2013	2014	2015	2016
	% Change	% Change	% Change	% Change
January	1.4	-1.9	-0.8	0.7
February	1.2	1.6	-1.3	-1.1
March	-0.1	1.3	0.8	-1.0
April	-0.8	0.6	-0.5	1.7
May	1.2	0.7	0.7	0.2
June	0.3	-0.9	-0.5	0.7
July	-0.2	0.7	0.7	1.8
August	0.5	0.7	0.2	-1.8
September	0.1	0.3	-0.3	-1.1
October	-0.2	0.7	0.4	1.4
November	2.2	0.9	-1.7	0.5
December	-0.8	0.2	0.2	1.0

SOURCE: Bureau of Transportation Statistics

Table 2A: Freight Transportation Services Index by Month, 2013-2016

	2013	2014	2015	2016
January	114.1	115.8	122.7	122.1
February	115.5	117.6	121.1	120.7
March	115.4	119.1	122.1	119.5
April	114.5	119.8	121.5	121.5
May	115.9	120.6	122.3	121.7
June	116.2	119.5	121.7	122.5
July	116.0	120.3	122.6	124.7
August	116.6	121.1	122.9	122.5
September	116.7	121.5	122.5	121.2
October	116.5	122.4	123.0	122.9
November	119.1	123.5	120.9	123.5
December	118.1	123.7	121.2	124.7

SOURCE: Bureau of Transportation Statistics

Table 3: Freight, Passenger and Combined Transportation Services Indexes Year-to-Date Change, 2007-2016
Percent change to December from December of the previous year

Year	Freight	Passenger	Combined
2007	0.1	2.4	0.7
2008	-9.5	-5.2	-8.2
2009	1.2	0.1	0.8
2010	7.3	2.5	5.8
2011	5.9	2.2	4.8
2012	-2.4	0.3	-1.6
2013	5.0	1.6	4.0
2014	4.7	2.5	4.1
2015	-2.0	3.0	-0.5
2016	2.9	-0.3	1.9

SOURCE: Bureau of Transportation Statistics

Table 4: Freight Transportation Services Index from Year-to-Year Percent Change in the December Freight TSI
(Monthly average of 2000 = 100)

	December Freight TSI	Percent change from same month previous year
2007	110.8	0.1
2008	100.3	-9.5
2009	101.5	1.2
2010	108.9	7.3
2011	115.3	5.9
2012	112.5	-2.4
2013	118.1	5.0
2014	123.7	4.7
2015	121.2	-2.0
2016	124.7	2.9

SOURCE: Bureau of Transportation Statistics

NOTE: Percent changes based on numbers prior to rounding.

**Table 5: Transportation Services Indexes from Previous Years
Percent Change to 2016 (December to December)**

Since December ...	Duration in years	Freight TSI Percent change to December 2016	Passenger TSI Percent change to December 2016	Combined TSI Percent change to December 2016
2015	1	2.9	-0.3	1.9
2014	2	0.8	2.6	1.4
2013	3	5.6	5.3	5.5
2012	4	10.8	6.9	9.7
2011	5	8.2	7.2	7.9
2010	6	14.5	9.5	13.1
2009	7	22.9	12.3	19.6
2008	8	24.3	12.4	20.5
2007	9	12.5	6.6	10.7
2006	10	12.6	9.2	11.4

SOURCE: Bureau of Transportation Statistics

**Table 6: Passenger Transportation Services Index Monthly Changes, 2013-2016
Percent change from previous month**

	2013 % Change	2014 % Change	2015 % Change	2016 % Change
January	0.9	0.0	-0.7	-0.9
February	-0.3	-0.3	-1.4	0.5
March	-0.4	2.1	2.5	-1.3
April	0.6	-0.1	0.2	1.3
May	-0.1	0.5	0.2	0.2
June	0.7	-0.7	0.4	1.0
July	-0.9	0.1	2.0	-1.2
August	0.8	0.6	-1.5	-0.7
September	-0.1	-0.2	0.2	1.4
October	0.3	0.5	1.7	-1.8
November	0.8	-0.9	-1.4	1.3
December	-0.7	1.0	1.0	-0.1

SOURCE: Bureau of Transportation Statistics

Table 7: Passenger Transportation Services Index from Year-to-Year
Percent change in the December Passenger TSI
(Monthly average of 2000 = 100)

	December Passenger TSI	Percent change from same month previous year
2007	116.3	2.4
2008	110.3	-5.2
2009	110.4	0.1
2010	113.2	2.5
2011	115.7	2.2
2012	116.0	0.3
2013	117.8	1.6
2014	120.8	2.5
2015	124.4	3.0
2016	124.0	-0.3

SOURCE: Bureau of Transportation Statistics

NOTE: Percent changes based on numbers prior to rounding.

Table 8: Combined Transportation Services Index Monthly Changes, 2013-2016
Percent change from previous month

	2013 % Change	2014 % Change	2015 % Change	2016 % Change
January	1.3	-1.4	-0.8	0.2
February	0.8	0.9	-1.2	-0.7
March	-0.3	1.5	1.2	-1.1
April	-0.3	0.3	-0.2	1.6
May	0.9	0.7	0.5	0.2
June	0.3	-0.8	-0.2	0.8
July	-0.4	0.5	1.1	0.8
August	0.6	0.7	-0.3	-1.5
September	0.1	0.1	-0.2	-0.2
October	-0.1	0.7	0.8	0.3
November	1.8	0.4	-1.6	0.8
December	-0.8	0.4	0.5	0.6

SOURCE: Bureau of Transportation Statistics

Table 9: Combined Transportation Services Index from Year-to-Year
Percent change in the December Combined TSI
(Monthly average of 2000 = 100)

	December Combined TSI	Percent change from same month previous year
2007	112.6	0.7
2008	103.4	-8.2
2009	104.2	0.8
2010	110.2	5.8
2011	115.5	4.8
2012	113.6	-1.6
2013	118.1	4.0
2014	122.9	4.1
2015	122.3	-0.5
2016	124.6	1.9

SOURCE: Bureau of Transportation Statistics

NOTE: Percent changes based on numbers prior to rounding.

Table 10: Freight Transportation Services Index Change by Quarter, 2007-2016
Percent change from the last month of the previous quarter

Year	1st Quarter (Jan-Mar) % Growth	2nd Quarter (Apr-Jun) % Growth	3rd Quarter (Jul-Sep) % Growth	4th Quarter (Oct-Dec) % Growth
2007	1.0	-1.9	-0.3	1.3
2008	-0.9	0.1	-2.4	-6.5
2009	-4.4	0.2	3.4	2.1
2010	3.8	1.0	0.7	1.6
2011	1.7	-0.5	1.0	3.5
2012	-3.2	1.7	-1.3	0.4
2013	2.6	0.7	0.4	1.2
2014	0.8	0.3	1.7	1.8
2015	-1.3	-0.3	0.7	-1.1
2016	-1.4	2.5	-1.1	2.9

SOURCE: Bureau of Transportation Statistics

Table 11: Passenger Transportation Services Index Change by Quarter, 2007-2016
Percent change from the last month of the previous quarter

Year	1st Quarter (Jan-Mar) % Growth	2nd Quarter (Apr-Jun) % Growth	3rd Quarter (Jul-Sep) % Growth	4th Quarter (Oct-Dec) % Growth
2007	2.6	0.2	0.8	-1.1
2008	0.4	-0.3	-3.7	-1.6
2009	-1.6	0.1	0.9	0.7
2010	0.3	1.1	1.2	0.0
2011	0.3	0.6	0.8	0.5
2012	0.3	-0.7	0.5	0.2
2013	0.3	1.2	-0.3	0.3
2014	1.8	-0.3	0.4	0.6
2015	0.4	0.7	0.6	1.2
2016	-1.7	2.6	-0.6	-0.6

SOURCE: Bureau of Transportation Statistics

Table 12: Combined Transportation Services Index Change by Quarter, 2007-2016
Percent change from the last month of the previous quarter

Year	1st Quarter (Jan-Mar) % Growth	2nd Quarter (Apr-Jun) % Growth	3rd Quarter (Jul-Sep) % Growth	4th Quarter (Oct-Dec) % Growth
2007	1.4	-1.2	0.0	0.5
2008	-0.4	-0.1	-2.8	-5.1
2009	-3.6	0.1	2.7	1.7
2010	2.8	0.9	0.9	1.0
2011	1.4	-0.2	1.0	2.6
2012	-2.2	1.0	-0.8	0.4
2013	1.8	0.9	0.3	0.9
2014	1.1	0.2	1.3	1.5
2015	-0.8	0.0	0.7	-0.3
2016	-1.6	2.7	-1.0	1.8

SOURCE: Bureau of Transportation Statistics

Brief Explanation of the TSI

The Transportation Services Index (TSI) is a measure of the month-to-month changes in the output of services provided by the for-hire transportation industries. The freight index measure changes in freight shipments while the passenger index measures changes in passenger travel.

The TSI tells us how the output of transportation services has increased or decreased from month to month. The index can be examined together with other economic indicators to produce a better understanding of the current and future course of the economy. The movement of the index over time can be compared with other economic measures to understand the relationship of changes in transportation output to changes in Gross Domestic Product (GDP).

The freight transportation index consists of:

For-hire trucking,

Railroad freight services (including rail based intermodal shipments such as containers on flat cars),

Inland waterways transportation,

Pipeline transportation (including principally petroleum and petroleum products and natural gas), and

Air freight.

The index does not include international or coastal waterborne movements, private trucking, courier services, or the US Postal Service.

The passenger transportation index consists of:

Local transit,

Intercity passenger rail, and

Passenger air transportation.

The index does not include intercity bus, sightseeing services, ferry services, taxi service, private automobile usage, or bicycling and other non-motorized transportation.

The TSI includes only domestic "for-hire" freight and passenger transportation. For-hire transportation consists of freight or passenger transport services provided by a firm to external customers for a fee. The TSI does not include taxi services, paid ride services in personal motor vehicles (e.g., Uber, Lyft, etc.), intercity bus services, in-house transportation (vehicles owned and operated by private firms for their own use), or noncommercial passenger travel (e.g., trips in the household car).

